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ABSTRACT

This longitudinal study compared the longterm effects of beginning reading instruction in traditional orthography (TO) and the initial teaching alphabet (i.t.a.) on two pupil populations comparable in intelligence, socioeconomic status, and preschool experience. Teacher and school factors were rigorously controlled. A continuous comparison of results in the first through sixth grades on standardized measures of reading achievement was supplemented by studies of characteristics of writing and spelling behaviors and creativity measures to determine longitudinal effects of the differentiated beginning. It was found that the i.t.a. pupils continuously showed better abilities in word discrimination, word knowledge, spelling, and creative use of words than did the TO pupils. Additional data also indicated (1) that twice as many TO pupils received remedial reading as did i.t.a. pupils during this period and (2) that while the TO pupils needed help on word recognition and comprehension, the i.t.a. pupils needed help only on comprehension. It was concluded that compared to the use of TO, the use of i.t.a. had a significantly more beneficial and lasting effect in developing the characteristics which combine to produce a higher success rate among children. Tables are included. (AW)

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The Early to Read - i.t.a. program: Effects and Aftermath
A Six Year Longitudinal Study*

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Though it has been argued that only longitudinal studies of some duration can truly answer questions of interest on the effects of a given procedure on reading achievement, few such studies have been undertaken. Fewer studies have been replicated. The studies reported here have followed the course of achievement with two populations from the first through the sixth years of school. The design of the overall study allowed replication with a second population in the first and second grade years as well as studies to determine the effects of curriculum modifications on the achievement of an additional populations from the second through the sixth grade years.

The design of the study, taking cognizance of research to the date of beginning, used a program for both i.t.a. and T.O. populations which emphasized identical methodology and a sequencing of the grapheme-phoneme relationships with didactic methodology to maximize instruction with T.O. The procedures used were designed from a knowledge of ~~the~~ strengths of instruction using the regularity of English with i.t.a. The study was undertaken to determine whether, in fact, i.t.a. was a potent factor or whether maximized instructional considerations with T.O. could produce similar skill. Based on the utility of symbol-sound correspondences for writing, a sequencing of spelling patterns for decoding-encoding skills was established. The use of a language--experience approach solely for a minimal three month period was followed by the

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introduction of texts for directed and self-determined activities.** In the case of the i.t.a. population, transfer based on competence from i.t.a. print was in the initial studies to the materials being used by the T.O. population without skills curriculum changes based on population achievements and needs.

Thus, the first question about the value of i.t.a. could be studied at the end of the third month of instruction without reference to difference in text materials. The control of readability levels of materials being used next permitted a study of variable achievements at the 5th month and later periods in terms of reader levels, while achievements in skill areas could be tested at the 3rd, 6th, and 8th month points, and at the end and/or beginning of each school year. While a variety of questions could be examined, I do not mean to suggest that all questions were studied in this design. Nor do I suggest that these studies were attempting to duplicate the ongoing basic works of Dr. John Downing and associates in the Reading Research Unit whose initial design controlled materials but allowed methods to vary or the works of Barbara Jones whose later design controlled method and materials.

The populations were normal in intelligence, of similar socio-economic status and had similar pre-school experience. They were instructed by teachers of similar age, experience and training backgrounds. In-school time factors, availability of materials and resource persons, special instructional activities, etc. were rigourously controlled.

A continuous comparison of results in the second thru sixth grade years on standardized measures of reading achievement were supplemented by studies of characteristics of writing and spelling behaviors, and creativity measures to determine longitudinal effects of the differentiated beginning. In the second and subsequent years,

**The program design as suggested here was incorporated into teacher guides and children's materials of The Early to Read - i.t.a. series which were the basis for the i.t.a. studies described here.

both populations followed identical instructional programs in the T.O. medium with children from either population becoming mixed by normal grouping and movement characteristics. Coding procedures permitted us to recapture the populations to study differences. Cumulative records on such characteristics as retention in a grade, remedial reading, etc. were kept for later study.

The Metropolitan achievement tests results, obtained in the 10th week of the first year of school, established the level of achievement and is indicative of the educationally significant differences being developed by the language-experience program phase of the Early to Read - i.t.a. series as compared to the same procedures in T.O. In comparison with the T.O. achievement of the grade equivalent score of 1.3 on Word Discrimination, the i.t.a. population mean achievement was 2.2 while Word Knowledge scores at this early point were 1.2 and 1.8 respectively. It is a reasonable inference that the consistency of the i.t.a. as opposed to the inconsistency of the T.O. spelling pattern-sound relationships permitted easier and more rapid acquisition of skills for the children using i.t.a. in a structured language-experience program. The fact that a marked reduction in typical b-d and other letter confusions was noted when the populations were compared suggests that the design of Pitman's i.t.a. characters contained additional discriminative features which were perceptually significant in the learning process.

Following the introduction and use of readers and supplementary texts, an assessment at the beginning of the sixth month using the Botel Reading Inventory indicated that the median achievement of the i.t.a. population was at the first reader level while the T.O. population median was at the pre primer level. Almost 43% of the i.t.a. population were found at instructional levels from 2.1 to 4th reader as compared with 3% of the T.O. population. The data on this test were confirmed by the results of the Metropolitan Achievement tests also administered in this sixth month--

the i.t.a. population achieving 2.9 on Word Discrimination and 2.7 on Word Knowledge as opposed to the T.O. achievement of 1.7 and 1.5 on the same measures.

Achievements in the 8th month were also markedly different. While the T.O. population achieved Word Discrimination & Word Knowledge scores of 2.1 and 1.9, the i.t.a. population demonstrated scores of 3.6 and 2.9--one to one and half years ahead of the T.O. group. Standardized test results indicated that, from the second thru the sixth grade years, mean differences in favor of the i.t.a. population existed on almost all subtests at all end of year points. These differences were statistically significant on Spelling and Language Skill subtests in the second grade, on Vocabulary, Comprehension, and Knowledge and Use of References in the 3rd grade, on every subtest of the Iowa Test of Basic Skills in the fourth grade and on punctuation (5th & 6th grade), capitalization and use of references in the 6th grade. Although the populations maintained their equivalency in IQ, the T.O. population was at no point able to overcome the inhibitory characteristics of T.O. in the first year of school so as to achieve significantly better on any subtest of the variety of standardized measures used.

Spelling achievement is measured normally in two ways: as a proofreading-recognition exercise or as a response to dictation. Spelling when measured as encoding in i.t.a. in the first year was significantly and markedly better than the control population's skill. When measured by T.O. standards on standardized tests while children were still reading and writing i.t.a., the T.O. population was significantly better. Though such testing is necessary for research, it is obviously unfair to the child who has not studied T.O. spelling. However, it should be noted that at no point in the next 5 years was the T.O. population able to demonstrate anything comparable to this first year achievement. In the second thru sixth years, the i.t.a. population achieved spelling ability on standardized tests which was significantly better, thus suggesting positive effects of the i.t.a. beginning on a perceptual (proof reading-recognition)

task.

The i.t.a. population also demonstrated, at the end of the second thru the sixth years, that their ability to spell under dictation constraints was statistically significantly better and that this educationally superior ability was of high singificance as late as the end of the sixth year when catching up by the T.O. population should have occurred.

Tables I and II report data on random sample populations which are of high interest since early reports of i.t.a. progress indicated an observed high creativity or creative outpouring. Though "Thinking Creatively With Words," form A of the Torrance Test of Creativity was administered to the entire fourth grade population, scoring procedures precluded obtaining results for the total population. Thus, the results of random samples were studied as being representative of the whole.

TABLE I

"Thinking Creatively With Words", Form A, Results from the Random Samples of the 1964-1965 i.t.a. and T.O. Populations, May, 1968.

	i.t.a. N=61 *I.Q.=109.96		T.O. N=61 *I.Q.=110.63		
Subtests	M.	S.D.	M.	S.D.	t
Fluency	45.95	5.79	47.16	21.59	- .40
Flexibility	23.47	7.29	21.67	8.31	1.27
Originality	9.96	4.91	6.90	4.71	3.38#

*I.Q. difference nonsignificant.
#Significant below the 1 per cent level.

The results suggest that the i.t.a. and T.O. populations do not differ markedly in the factors of verbal fluency or flexibility but differ significantly on the factor of originality. As confirmation, the Carlson Analytical Scale for measuring the originality of children's writing was utilized to study the compositions of the children. These responses were obtained using a picture as a stimulus. Table II

reports these findings, and the results permit the conclusion that the i.t.a.-taught child in the fourth year of school is significantly more original in his writing, confirming the finding of the Torrance Test,

TABLE II

Carlson Analytical Originality Scale Results on the Written Responses of the Random Samples of the i.t.a. and T.O. 1964-1965 Populations.

	i.t.a. N=61 *I.Q.=109.96		T.O. N=61 *I.Q.=110.63		
	M.	S.D.	M.	S.D.	t
Originality Scale Scores	36.63	17.52	31.48	10.38	2.16#

*I.Q. difference nonsignificant.
#Significant below the 5 per cent level.

Verbal, Form A. the difference is also educationally significant since on the Carlson Scale the i.t.a. result is rated as excellent, the T.O. result as good. It would appear that the language-experience elements of the Early to Read-i.t.a. series which programmed and encouraged written expression by the child almost from the first day of school, in combination with i.t.a. which released him from the inhibitions of traditional spelling, has a long-lasting positive effect on the child's ability to approach tasks with originality.

While the above data are important to any initial study of i.t.a. versus T.O., the effects of such a differentiated beginning should also be studied in respect to other educational advantages and disadvantages. If i.t.a. is of value in allowing children to learn to read more easily and rapidly, as we have seen here, do children post-i.t.a. have a lesser or greater need for remedial reading? If so, what aspect of reading needs attention? Is there a higher or lesser degree of failure as measured by the repetition of a grade? If effects in these areas were negatively different it could be argued that i.t.a. should be rejected as a valid basis

for instruction though results of testing were better. If results were no better, positive differences on such questions could still provide arguable basis for the use of i.t.a.

In 1963, when i.t.a. was introduced into the Bethlehem City School District first grade program, a study of the number of children who were in need of remedial reading instruction in the third grade (all having started in T.O.) was 154. This compares with 39 who were in need of remedial instruction in 1968 when all children entering the 3rd grade year had started their 1st year in i.t.a. A 75% reduction in the need for remedial reading post-i.t.a. is a major, significant, educational benefit for a school district--in terms of benefit to the child who has not had to suffer failure and ego-damage, and in terms of economic benefit when reorientation and use of staff released from remedial work is possible.

While it is of some interest to note that a large percentage (35%) of the original i.t.a. - T.O. 1964-1965 population has moved out of the district by the sixth grade of school, it was more interesting to discover that the failure rate over this six year period, as evidenced by the number of children who repeated grades, has been three times higher for the T.O. group (29.6% to 9.1%). This significantly high failure rate in the T.O. population was traceable to the effects of an inadequate beginning in the learning experience (in reading primarily) which apparently affected the total skills-behavior spectrum of the child.

Additional data indicated that twice as many T.O. pupils (14.6% to 7.1%) received remedial reading as did i.t.a. pupils during this period. Of interest, too, was the discovery that the type of remedial reading needed by 7.1% of i.t.a. pupils and the 14.6% of T.O. pupils differed. The T.O. Pupil needed help on word recognition--a basic reading skill--and comprehension--a basic intelligence skill-- while the i.t.a. child, who had mastered basic reading skills, needed additional help

only in the comprehension area.

In summary, the use of i.t.a. with a language-arts oriented program, one which uses language-experience and text approaches and emphasizes a didactic multi-sensory methodology for instruction, produced a highly significant development of auditory perception and encouraged a rationality of approach to T.O. spelling based on grapheme-phoneme correspondence. The facile skill in encoding sound developed by the i.t.a. beginning had a positive and long-lasting effect, through the increased opportunity for practice, on writing skills. The results in the first and subsequent years showed that i.t.a. was a highly potent factor in reading, writing, spelling and creativity achievements. The use of i.t.a. has had a significantly beneficial and lasting effect in developing those characteristics (ego-strength, skills development, and learning behavior) which combine to produce a higher success rate among children somewhat less able or equal in other aspects to T.O. trained children.